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Remarks

The above Amendments and these Remarks are in reply to the Office Action mailed September 12, 2002. Claims 1-100 are pending in the application. Claims 14-24, 76, and 94 have been amended. Claims 37-69 and 82-93 have been cancelled. Applicants respectfully request reconsideration of claims 1-36, 70-81, and 94-100.

I. Summary of Office Action

The Examiner required the claims to be restricted to one of two alleged inventions: (1) Group I, including claims 1-36, 70-81, and 94-100; or (2) Group II including claims 37-69 and 82-93.

The Examiner rejected claims 1-36, 70-81, and 94-100 under 35 U.S.C. § 103(a) as being unpatentable over *Pileggi, et al.* (U.S. Patent No. 6,286,128) in view of *Hossain, et al.* (U.S. Patent No. 5,953,236).

II. Election in Response to Restriction Requirement

Applicants hereby elect to proceed with Group I, including claims 1-36, 70-81, 94-100. Claims 37-69 and 82-93 have been cancelled without prejudice so that they can be submitted with a divisional application.

Applicants make this election to further the prosecution process. This election is not meant to indicate that the Applicants agree or disagree with the restriction requirement.

III. Response to Rejections of Claims 1-36, 70-81, and 94-100 Under 35 U.S.C. § 103(a)

Applicants respectfully submit that *Pileggi, et al.* is disqualified as a prior art reference pursuant to 35 U.S.C. § 103(c) — rendering the rejection of claims 1-36, 70-81, 94-100 under 35 U.S.C. § 103(a) moot. The above-identified application and *Pileggi, et al.* were, at the time the invention of the above-identified application was made, commonly owned by Monterey Design Systems, Inc. ("Monterey Design").

A. Factual Background

Pileggi, et al. was filed on June 12, 1998 and issued on September 4, 2001. Ex. 1, ¶ 2.[1] All rights in the application for *Pileggi, et al.* and the resulting *Pileggi, et al.* patent were assigned to Monterey Design by September 1998. Ex. 1, ¶ 3. Monterey Design has maintained complete ownership of these rights. Ex. 1, ¶ 4.

The above-identified application was filed on August 3, 2000. Ex. 1, ¶ 5. All inventors of the invention in the above-identified application were under an obligation to assign the invention to Monterey Design at the time the invention was made. Ex. 1, ¶ 6. Each inventor executed an agreement with Monterey Design prior to the filing date of the application and the making of the invention that acknowledged this obligation. Ex. 1, ¶ 6. Each inventor also assigned all rights in the application to Monterey Design by August 2000. Ex. 1, ¶ 7. Monterey Design has maintained complete ownership of these rights. Ex. 1, ¶ 7.

At the time the invention in the above-identified application was made, Monterey Design owned all rights in *Pileggi, et al.* and the inventors of the invention in the above-identified application were under an obligation to assign all rights in the invention to Monterey Design. Ex. 1, ¶ 8.

B. Legal Standard to Disqualify a Reference Under 35 U.S.C. § 103(c)

Subject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f), and (g) of 35 U.S.C. § 102, shall not preclude patentability under 35 U.S.C. § 103 when the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. 35 U.S.C. § 103(c). This rule applies to all utility patent applications filed on or after November 29, 1999. M.P.E.P. § 706.02(k).

The M.P.E.P. indicates that the following statement alone is sufficient evidence to disqualify Patent A from being used in a rejection under 35 U.S.C. § 103(a) against the claims of Application X: "Application X and Patent A were, at the time the invention of Application X was made, owned by Company Z." M.P.E.P. § 706.02(l)(2).

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[1] Ex. 1 refers to the Declaration of Stephen P. Sample in Support of Response to Office Action, which is attached hereto as Ehibit 1 to this Response.

C. *Pileggi, et al.* is Disqualified as a Prior Art Reference

The above-identified application was filed on August 3, 2000 — making 35 U.S.C. § 103(c) applicable for disqualifying *Pileggi, et al.* as a reference for purposes of 35 U.S.C. § 103(a).

Applicants respectfully submit that the Examiner asserted *Pileggi, et al.* as prior art under 35 U.S.C. § 102(e) to preclude patenting under 35 U.S.C. § 103 — *Pileggi, et al.* does not qualify as prior art under any other section of 35 U.S.C. § 102. At the time the invention in the above-identified application was made, Monterey Design owned all rights in *Pileggi, et al.* and the inventors of the invention in the above-identified application were under an obligation to assign all rights in the invention to Monterey Design. Ex. 1, ¶8. This disqualifies *Pileggi, et al.* as a prior art reference under 35 U.S.C. § 103(a).

Applicants respectfully submit that the disqualification of *Pileggi, et al.* renders the rejections of claims 1-36, 70-81, 94-100 under 35 U.S.C. § 103(a) moot and places these claims in order for allowance.

IV. Amendments to Claims 14-24, 76, and 94

Claims 14-24 have been amended to replace the term "computer code" with "computer-readable medium." Claims 76 and 94 have been amended to correct typographical errors.

In view of the above Amendments and Remarks, reconsideration of claims 1-36, 70-81, and 94-100 is requested.

The Commissioner is authorized to charge any underpayment or credit any overpayment to Deposit Account No. 501826 for any matter in connection with this document, including any fee for extension of time, which may be requested.

Respectfully submitted,

Date: March 10, 2003 By: _____

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APPENDIX

In the Claims:

14. (Once Amended) The [computer code] computer-readable medium of claim 13, wherein the defining the physical design further comprises performing a soft placement of the design.

15. (Once Amended) The [computer code] computer-readable medium of claim 14, wherein the performing the soft placement of the design further comprises performing one or more of the following: placement of cells of the design, logic optimization of the design, routing of wires in the design, timing and clock control for the design and extraction of the design.

16. (Once Amended) The [computer code] computer-readable medium of claim 14, wherein the performing the soft placement of the design further comprises simultaneously performing one or more of the following in parallel: placement of cells of the design, logic optimization of the design, routing of wires in the design, timing and clock control for the design and extraction of the design.

17. (Once Amended) The [computer code] computer-readable medium of claim 13, wherein the determining the physical placement level of the circuit when the error in prediction of the timing value satisfies a predetermined threshold further comprises:

localizing placement of cells and wires in the physical design;

creating a profile of the wire lengths from the physical design;

calculating an error in a prediction of timing value from the profile of the wire lengths; and

comparing the error in the prediction of the timing value with the predetermined threshold to determine if the error satisfies the predetermined threshold.

18. (Once Amended) The [computer code] computer-readable medium of claim 13, wherein the determining the physical placement level of the circuit when the error in prediction of the timing value satisfies a predetermined threshold further comprises:

(f) quadrisectioning the physical design into bins;

(g) localizing placement of cells and wires of the physical design into the bins;

(h) creating a profile of the wire lengths in each of the bins;

(i) calculating a plurality of errors in a prediction of timing values from the profile of the wire lengths for each bin respectively;

(j) comparing each of the plurality of errors in the prediction of the timing values with the predetermined threshold to determine if the error satisfies the predetermined threshold; and either:

further quadrisectioning the physical design and repeating (b through e); or

generating an interrupt if all of the plurality of errors in the prediction of the timing values for each of the bins satisfy the predetermined threshold.

19. (Once Amended) The [computer code] computer-readable medium of claim 18, wherein the creating of profile of the wire lengths in each of the bins further comprises plotting wire lengths versus instances of nets in each of the bins.

20. (Once Amended) The [computer code] computer-readable medium of claim 13, wherein the computer code is further configured to effectuate performing interactive optimization of the physical design after the error in prediction of the timing value satisfies the predetermined threshold.

21. (Once Amended) The [computer code] computer-readable medium of claim 13, wherein the computer code is further configured to effectuate analyzing one or more of the following characteristics of the physical design after the error in prediction of the timing value satisfies the predetermined threshold: congestion, timing, power, and signal integrity.

22. (Once Amended) The [computer code] computer-readable medium of claim 21, wherein the computer code is further configured to effectuate generating a report indicative of the congestion, timing, power, signal integrity of the physical design.

23. (Once Amended) The [computer code] computer-readable medium of claim 13,

wherein the computer code is further configured to effectuate:

performing a second physical design of the circuit derived from the physical design of the circuit performed while tracking the error in prediction of the timing value associated with one or more nets in the circuit; and

generating a GDS file from the second physical design of the circuit.

24. (Once Amended) The [computer code] computer-readable medium of claim 23, wherein the performing the second physical design of the circuit further comprises simultaneously performing one or more of the following in parallel: placement of cells of the design, logic optimization of the design, routing of wires in the design, timing and clock control for the design and extraction of the design.

76. (Once Amended) A semiconductor device manufactured by a first party by:

receiving an sign-off prototype, the sign-off prototype generated by:

defining a physical design of a circuit while tracking an error in prediction of a timing value associated with one or more nets in the circuit;

determining a physical placement level of the circuit when the error in prediction of the timing value satisfies a predetermined threshold; and

generating the sign-off prototype from the physical placement level of the circuit when the error in prediction of the timing value satisfies a predetermined threshold; [and after receiving the sign-off prototype:] and after receiving the sign-off prototype, the first party performing:

generating a second physical design of the circuit from the sign-off prototype;

generating a GDS file from the second physical design;

having a mask set generated from the GDS file; and

having the semiconductor device fabricated using the mask set.

94. (Once Amended) A semiconductor device, comprising:

an integrated circuit segmented into a plurality of bins, the integrated circuit including[;]:

a first bin having a first group of nets optimized to a first set of criteria; and

a second bin having a second group of nets optimized to a second set of criteria,

wherein the first criteria and the second criteria are substantially different.